the blood. Sufficient blood is withdrawn from the patient to yield from 12 to 30 c.c. of serum. After the blood has coagulated the serum is pipetted off and if necessary centrifuged for twenty minutes. If diluted serum is to be used, to 12 c.c. of the clear serum is added 1 c.c. of a solution of mercuric chlorid in freshly distilled water so made that each cubic centimeter contains one-fiftieth grain of mercuric chlorid. A sufficient amount of normal salt solution is added to the serum thus prepared to make a total volume of 30 c.c. If the concentrated serum is to be used the same quantity of mercuric chlorid is added to 30 c.c. of serum but there is no special reason for employing this concentrated preparation. Byrnes does not believe that mercurialized serum alone is the only treatment that is necessary in syphilis of the central nervous system, he is of the opinion that it is equally, if not more, efficacious than salvarsanized serum in the local treatment of these diseases. The immediate reactions following its administration are, in general, not so severe as those after the use of salvarsanized serum, and the cell count in the spinal fluid appears to be more quickly reduced. Since preliminary medication is not required, the blood may be obtained at any time; and because of the greater stability of the mercurialized serum it may be prepared at leisure and kept in sealed flasks until it is convenient to administer it. In certain cases of cerebrospinal syphilis, in which the serum Wassermann is negative but in which there are all the indication for intraspinal treatment, Byrnes thinks it unnecessary to subject the patient to the discomforts of an intravenous administration of salvarsan merely for the purpose of securing a preparation for intradural injection. This objection does not arise in the use of mercurialized serum. It is true that in many cases both the blood and spinal fluid show evidences of infection, and in such instances the intravenous dose of salvarsan cannot justly be withheld so that he has frequently given the combined salvarsanized and mercurialized serum intraspinally. Owing to the greater stability of the mercurialized serum Byrnes hopes that a method may be devised by which a permanent preparation can be dispensed in sealed ampoules and thus simplify the whole technique of intraspinal therapy. While it may be unwise to entertain the idea of using a foreign serum, it is not unlikely that human serum may be obtained in sufficient quantities for this purpose.

The Treatment of Tetanus.—HOCHHAUS, KREUTER, ROTHFUCHS, ALEXANDER, KÜHN, and MÜLLER (*München. med. Wnschr.*, 1914, lxi, 2253–2260) write concerning their experiences in treating tetanus among the wounded. There is a great difference in opinion regarding the efficacy of various methods of treatment. Some report great benefit from magnesium sulphate while others have had no success at all with this method. Kreuter advocates the intravenous and intraspinal use of large doses of serum. Rothfuchs claims to have seen marked benefit from salvarsan in four cases. Alexander states that 8 of his patients, given 10 grams of chloral in a single dose each day, have all recovered while 2 died who received only 5 grams of chloral. This group of patients also received serum besides the symptomatic chloral treatment. Kühn and Müller advocate the use of luminal instead of chloral and other sedatives to control the convulsions. They speak especially of the sodium salt, which because of its solubility of water can be used by subcutaneous injection. They believe it is superior to chloral in that it is less depressing to the heart. Müller has found hot baths to be serviceable in controlling the spasms. He has also made use of tracheotomy in some cases, and speaks of the great relief that may be obtained by this procedure.

Pneumothorax for Hemoptysis.—Von Adelung (*Boston Med. and Surg. Jour.*, 1914, clxxi, 200) says that the value of induced pneumothorax to control bleeding from the lungs is not sufficiently appreciated. The medical treatment involves considerable loss of time and subjects the patient to the unpleasant and often harmful by-effects of the drugs used. This is especially true of opium, the most valuable of the drugs used for hemoptysis. Pneumothorax, on the other hand, acts promptly and obviates the disadvantages of drugs. The change of pressure from negative to positive leads to the cessation of hemorrhage. By introducing a little more gas every few days the positive pressure may be maintained so that hemorrhage cannot recur. And meanwhile, unless otherwise contra-indicated, the patient may be allowed to go about instead of being confined to bed. For the purpose of inflation the author uses a portable apparatus modeled after Murphy's original apparatus. More recently Murphy has suggested a simple procedure for emergency cases which consists in introducing a hypodermic needle into the pleural space and allowing atmospheric air to be sucked in until the patient feels distress. The needle is dulled by rubbing it on a stone; a puncture of the skin is made with any sharp instrument. The boiled hypodermic needle is then inserted into the pleural sac, with its outer end covered by sterile absorbent cotton, which filters the air that passes in.

The Intraspinal Treatment of Syphilis of the Central Nervous System with Salvarsanized Serum of Standard Strength.—Ogilvie (*Jour. Amer. Med. Assoc.*, 1914, lxiii, 1936) being convinced of the value of the Swift-Ellis method, from observation of results in some 200 treatments, but believing that as in the employment of all other anti-syphilitic medication, the maximum efficiency would more readily be attained if it was possible to increase or decrease the strength of the curative agent, undertook to prepare, *in vitro*, a serum of known salvarsan content that could be safely administered intraspinally. Ogiloie gives the details of his method of preparing the serum for injection in the article. Essentially the method consists in the addition of a salvarsan solution, prepared as for intravenous injection, to fresh blood serum. To 15 c.c. of the serum the desired amount of salvarsan is added, an important point being that the temperature of the salvarsan solution and the serum should be the same when the two are mixed. The serum is gently agitated to thoroughly mix the two and is placed in a thermostat at 37° C. for forty-five minutes. From this it is placed in a thermostat at 56° C. for thirty minutes and is then ready to be administered intraspinally. This serum should be given as soon as possible after preparation and under no conditions should be used when more than three hours old. For repeated use Ogilvie has found that from 0.25 mg. to 0.5 mg. of salvarsan added to 15 c.c. of serum is the safest and most effectual dose to employ. He reports a series of